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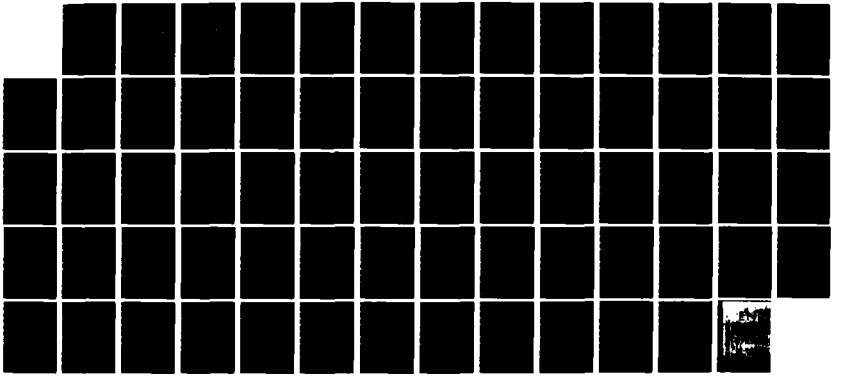

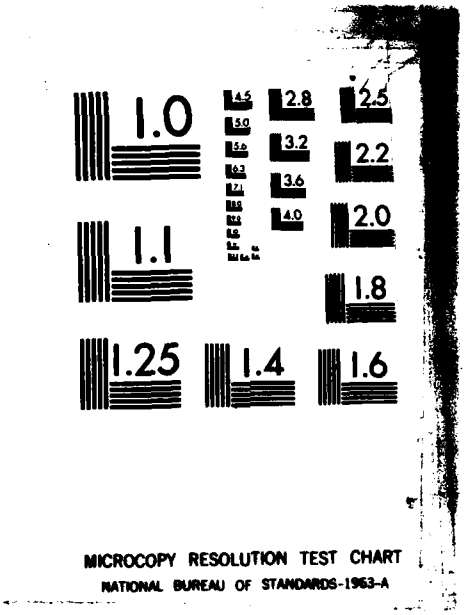

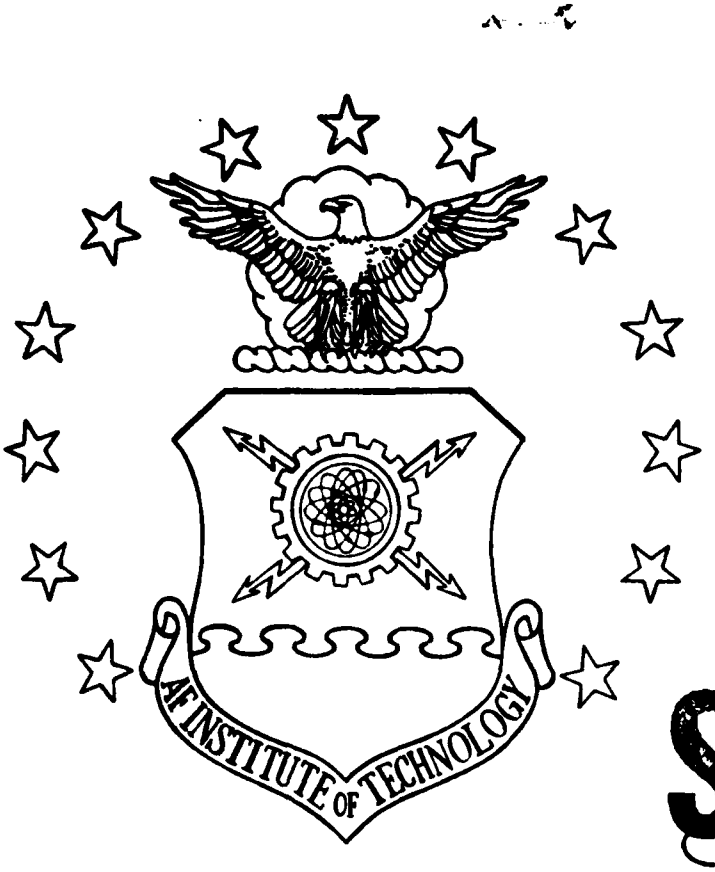

ANALYSIS OF TUTORED VIDEOTAPE INSTRUCTIONAL DELIVERY SYSTEM

AU-AFIT-ED-TR-83-1
JULY 1983

Major Alvin L. Milam, Ph.D
G. Ronald Christopher, Ph.D

DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY (ATC)
AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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INSTRUCTIONAL DELIVERY SYSTEM

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Directorate of Educational Plans and Programs
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20. ABSTRACT

A statistical analysis was done of tutored videotape instructional system (TVIDS) for SYS 100, Introduction to Acquisition Management, provided by the School of Systems and Logistics to determine if (a) student groups were comparable in terms of grade/rank, education level, sex, age, and years of logistical experience; (b) student groups were statistically equal in terms of entry level knowledge; (c) student groups were statistically equal in terms of academic achievement; (d) students accepted the tutored videotape instructional system. Data gathering instruments included a demographic questionnaire, end-of-course critique, pretest, and post-test content exam. Analyses were performed using cross-tabulation, chi-square, one-way analysis of variance, and multiple regression. The significance level was established at .05.

Results indicated the students were comparable in grade/rank and age. There were statistical differences among course offerings for the educational level of students. Sex and years of logistical experience could not be compared due to the population variances not being equal.

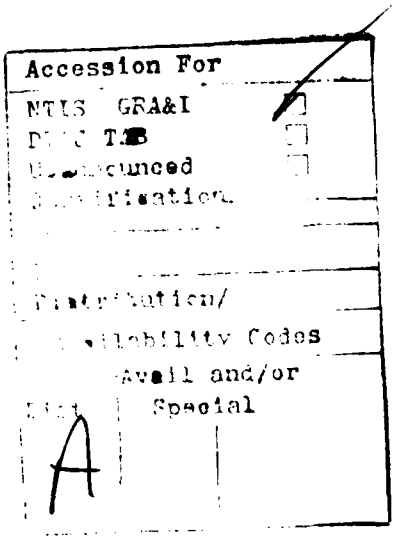
Of the eleven comparison groups, only one group was statistically different in entry level knowledge.

For academic achievement, four comparison groups were statistically different.

The average acceptability score for all students showed that students did not accept the TVIDS as a means of instruction.

In summary, the demographic factors of grade/rank and education level are predictors of academic achievement, and the students do not accept the TVIDS as a mode of instruction.

TABLE OF CONTENTS



ANALYSIS OF TUTORED VIDEOTAPE INSTRUCTIONAL DELIVERY SYSTEM SYS 100, 82A, B, C, E, AND 83A

1. INTRODUCTION

This report summarizes the analyses of data collected during the 1982 and 1983 offerings of the SYS 100 (Introduction to Acquisition Management) professional continuing education course presented by the Tutored Videotape Instructional System (TVIDS). The course was presented at two locations. Four offerings were at the Aeronautical Systems Division (ASD) WPAFB, Ohio and one at the Electronic Systems Division (ESD), Hanscom AFB, Massachusetts.

2. METHODOLOGY

2.1 Data Preparation. Data used in this analysis were obtained from the following instruments:

(a) Demographic information questionnaire (Appendix A)

(b) Student End-of-Course Critiques (Appendix B)

(c) Content Pretest

(d) Content Post-Test

Data were obtained using student completed computer scan sheets. These were processed to provide disk files on the AFLC CREATE computer system using AFIT's OPSCAN equipment located in the School of Systems and Logistics. Data gathered by each instrument includes a numeric student identification code, permitting consolidation of data items for each student. Separate files containing data from each of the four instruments at each of the two locations were output from the CREATE System in punched card format and loaded into disc files on the ASD CYBER computer system. The following steps were then accomplished to prepare a consolidated data base.

2.1.2 Software was written in FORTRAN to grade the tests, and combine the test scores with demographic and end-of-course critique data.

2.1.3 Obvious errors on the scan sheets such as erroneously coded student identification were manually corrected.

The result of this data preparation process is the data base listed at Appendix C. The format of each record is:

Record Columns	Content
1&2	Student location
3&4	Student number
5-10	Demographic Questions 1-6
25-54	End-of-Course critique items 1-30
56-58	Pretest score in percent
60-62, 64-66, 68-70	Post-test scores in percent for three tests

Although responses to the demographic instrument and end-of-course critique were alpha characters, the scanning process yields a numeric representation. In the data base, a value of 0 corresponds to an "A" student response, and a 1 represents a "B" response, etc. A blank column indicates no response to the item. As many observations as possible from each record have been used in the analysis presented in this report.

2.2 Analysis Objectives. This data analysis addresses the following research questions:

2.2.1 Were student groups comparable in terms of grade/rank, education level, sex, age, and years of logistical experience?

2.2.2 Were student groups statistically equal in terms of entry level knowledge?

2.2.3 What statistical differences in academic achievement occurred in offerings of the same course?

2.2.4 To what extent was the TVIDS acceptable to students?

2.3 Analysis Techniques. The following statistical methodologies, as implemented in the Statistical Package for the Social Sciences (SPSS), were applied in the analysis:

2.3.1 Cross tabulation and chi-square contingency table analysis. With this approach, data are presented in a two-way categorization to permit comparison of the percentage distribution of responses to a given item across categories defined by second item. This technique is particularly useful in comparing demographic items among the various offerings of locations at which

the course was presented and in comparing end-of-course critique responses in a similar fashion. The chi-square statistic calculated from data arrayed in this manner permits test of the hypothesis that the two modes of classification such as item and site are independent. Rejection of the hypothesis suggests dependence and would, as an example, imply statistically significant differences among locations. In all contingency table results presented in this report, the chi-square statistic is given to allow the reader to evaluate the degree of significance which equals or exceeds the .05 confidence level.

2.3.2 One-way analysis-of-variance (ANOVA). The ANOVA technique, as implemented in the SPSS breakdown procedure, presents a mean score on a single criterion variable for each specific group of respondents. A test of the hypothesis that all group means are identical can be performed. Rejecting this hypothesis implies that at least two of the groups differ significantly in criterion mean score. This method was used in examining the test scores using the following variables:

(a) Pretest score

(b) Post-test score

(c) Achievement

(d) Acceptance

Ten comparisons were made based on the five offerings. Specific comparison groups are shown in the experimental design section.

2.3.3 ANOVA and Multiple Comparison Test. There are some assumptions underlying the ANOVA and its mathematical development. One assumption is that the population distributions from which the samples were drawn are normal. A second assumption is that subjects of the experiments were randomly and independently drawn from this population.

The Scheffe' method of multiple comparisons was chosen to test the difference in means for the demographic data. The method was chosen because it is more rigorous than other multiple comparison methods, it can handle unequal cell numbers and it is not seriously affected by violation of assumption of normal distribution and homogeneity of variances.

2.3.4 Regression Analysis. To evaluate the relative importance of demographics, attitudinal variables, and presentation mode as predictors of the learning criteria, regression models in which the value of the criteria is predicted by a linear combination (weighted sum) of these variables were constructed. The models were built in a sequential fashion, using stepwise regression which adds predictor variables to the model in a sequence corresponding to their ability to predict the criterion. Statistical test of the predictive significance of each variable can be accomplished, and only statistically significant variables are included in the model.

2.3.5 Significance level. To determine if any differences between groups were significant, the 5% significant level was set. Any difference beyond 95% is a statistically significant difference and is simply written as being significant or significantly different.

2.4 Experimental design. The comparison groups included three tutored videotape offerings given in 1982 at Wright-Patterson in ASD, one offering given at ESD (82E) and an offering at ASD (83A). The comparison groups were:

All ASD vs ESD
82A vs 82B
82A vs 82C
82A vs 83A
82A vs 82E (ESD)
82B vs 82C N = 259
82B vs 83A
82B vs 82E (ESD)
82C vs 83A
82C vs 82E (ESD)
83A vs 82E (ESD)

In the tables, the following abbreviations apply:

CS = chi-square
SL = significance level or p = probability

3. RESULTS

3.1 Demographic variables. The five demographic variables of grade/rank, education level, sex, age, and years of job-related experience were compared using cross-tabulation. Demographic data for ASD 82A was not available to include in this analysis. The chi-square statistic tested for independence of the variables.

Tables D-1 through D-5 show the demographic data. The data for rank/grade is in Table D-1.

TABLE D-1
GRADE/RANK

CATEGORY	OFFERING					TOTAL
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
06, E8, 9, GM14	--	0%	2%	2%	0%	1%
05, E7, GM13	--	6	9	0	4	5
04, E6, GS12	--	13	27	16	15	18
03, E5, GS11	--	18	21	22	23	21
01, 2, E4, GS10	--	64	41	60	58	55

(CS = 12.71 SL = .39)

Offering	SIGNIFICANCE LEVEL: p =				
ASD 82A	---				
ASD 82B	---	---			
ASD 82C	---	.13	---		
ASD 83A	---	.37	.10	---	
ESD 82E	---	.92	.53	.65	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Each comparison group showed no statistical difference.

Table D-2 shows the data for student educational level in each offering.

TABLE D-2

EDUCATIONAL LEVEL

RESPONSE	OFFERINGS					
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	TOTALS
Doctorate	---	---	---	---	---	---
Masters	---	13%	36%	16%	39%	24%
Bachelors	---	71	54	75	42	63
Associate	---	4	2	0	8	3
High School	---	13	9	10	12	11

(CS = 18.69 SL = .03)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	---	---			
ASD 82C	---	.04	---		
ASD 83A	---	.52	.08	---	
ESD 82E	---	.04	.51	.01	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

ASD 82C vs ASD 82B, ESD 82E vs ASD 82B and ESD 82E vs ASD 83A are statistically different in this catagory.

Table D-3 shows student group composition according to the sex factor.

TABLE D-3

SEX

CATEGORY	OFFERINGS					TOTAL
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Male	---	71%	91%	84%	77%	81%
Female	---	29	9	16	23	19

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	---	---			
ASD 82C	---	.01	---		
ASD 83A	---	.16	.44	---	
ESD 82E	---	.76	.16	.63	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Only ASD 82C vs ASD 82B reveal a statistically difference composition on this factor.

Each comparison group was statistically equal in terms of age of the students. These data for age are displayed in Table D-4.

TABLE D-4

AGE

CATEGORY	OFFERINGS					TOTAL
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
46-55	---	9%	4%	8%	4%	6%
36-45	---	15	20	14	31	18
26-35	---	36	41	29	31	35
20-25	---	40	36	49	35	40

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	---	---			
ASD 82C	---	.56	---		
ASD 83A	---	.82	.31	---	
ESD 82E	---	.35	.69	.28	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Table D-5 displays the data for job-related experiences.

TABLE D-5

YEARS OF JOB-RELATED EXPERIENCE

CATEGORY	OFFERINGS					TOTAL
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
8+	---	6%	4%	0%	0%	3%
6-7	---	2	4	0	0	2
4-5	---	4	5	4	0	9
2-3	---	26	13	9	12	15
0-1	---	67	75	87	89	77

(CS = 15.60 SL = .21)

SIGNIFICANCE LEVELS: p =

Offerings					
ASD 82A	---				
ASD 82B	---	---			
ASD 82C	---	.45	---		
ASD 83A	---	.05	.37	---	
ESD 82E	---	.20	.45	.53	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

ASD 83A vs ASD 82B were statistically different.

Table D-6 displays the data for the multiple comparison tests on demographic variables using the Scheffe method as well as using Bartlett's test of homogeneity of variances.

TABLE D-6

HOMOGENEOUS TESTING: DEMOGRAPHICS BY LOCATION

VARIABLE	SCHEFFE	BARTLETT
Grade	p = .03	p = .38
Education	p = .21	p = .46
Sex	p = .04	p = .01
Age	p = .75	p = .73
Experience	p = .02	p = .00

The Scheffe multiple comparison tests showed significant differences in grade, sex, and years of logistics experience; however, the tests for homogeneity of variances showed that the variances of sex and years of experience are not equal. As far as the study is concerned, no statistical comparisons can be made which include sex and years of experience, but judgmental comparison can be made.

In summary, the demographic variables show that students in ASD 82C were of high grade/rank, and their numbers included more men than women. Students of ESD 82E were older, had more graduate degrees, and had less job-related experience than students from other class offerings.

3.2 End-of-course critiques. The 30 multiple choice questions and the student responses are shown in Tables C-1 through C-30 in percentage scores. The ten short answer questions from the back of the critique are summarized following Table C-30. Table C-1 gives the data on the first question, "The course objectives were made clear either orally or in the instructional aids."

TABLE C-1

OBJECTIVES MADE CLEAR

CATEGORY	OFFERINGS					TOTAL
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	70	95	87	73	72	81
Disagree	30	5	13	27	28	19

(CS = 12.77 SL = .01)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.01	---			
ASD 82C	.09	.28	---		
ASD 83A	.97	.02	.18	---	
ESD 82E	1.00	.02	.19	1.00	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

The totals reflect overall satisfaction (81% agree) that the course objectives were clear to the students.

Table C-2 displays the data for question 2: "The course appeared well-structured."

TABLE C-2

COURSE WELL-STRUCTURED

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	40	86	74	62	32	63
Disagree	60	14	26	38	68	37

(CS = 31.44 SL = .00)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.00	---			
ASD 82C	.00	.21	---		
ASD 83A	.12	.02	.33	---	
ESD 82E	.68	.00	.00	.05	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Overall, 63% of the students approved of the course structure.

Table C-3 displays the data for question 3: "The course structure permitted questions to be asked and answered satisfactorily."

TABLE C-3

STRUCTURE PERMITTED QUESTIONS

RESPONSE	OFFERING					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	51	23	52	47	24	41
Disagree	49	77	48	53	76	59

(CS = 13.87 SL = .01)

SIGNIFICANCE LEVEL: p =

Offering					
ASD 82A	---				
ASD 82B	.02	---			
ASD 82C	1.00	.01	---		
ASD 83A	.90	.04	.83	---	
ESD 82E	.06	1.00	.04	.12	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

A majority of the students replied negatively (59%) with ASD 82B students being the most negative.

Table C-4 displays the data for question 4: "There were adequate handout materials."

TABLE C-4
ADEQUATE HANDOUTS

RESPONSE	OFFERING					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	TOTALS
Agree	51	73	83	88	56	72
Disagree	49	27	17	12	44	28

(CS = 18.97 SL = .00)

SIGNIFICANCE LEVEL: p =

Offering					
ASD 82A	---				
ASD 82B	.08	---			
ASD 82C	.00	.31	---		
ASD 83A	.00	.16	.75	---	
ESD 82E	.92	.25	.02	.01	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Seventy-two percent of the students felt the handout materials were adequate.

Table C-5 displays the data for question 5: "The course was the right length."

TABLE C-5
COURSE RIGHT LENGTH

RESPONSE	OFFERING					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	24	52	56	44	36	44
Disagree	76	48	44	56	64	56

(CS = 10.58 SL = .03)

SIGNIFICANCE LEVEL: p =

Offering					
ASD 82A	---				
ASD 82B	.02	---			
ASD 82C	.01	.91	---		
ASD 83A	.13	.63	.41	---	
ESD 82E	.48	.30	.17	.72	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Students from three of the five offerings disagreed with the course length, and the total percentage showed 56% who did not like the course length.

Table C-6 displays the data for question 6: "My time could have been better utilized elsewhere."

TABLE C-6

TIME BETTER UTILIZED ELSEWHERE

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	43	25	37	32	40	35
Disagree	57	75	63	68	60	65

(CS = 3.51 SL = .48)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.13	---			
ASD 82C	.71	.29	---		
ASD 83A	.48	.64	.83	---	
ESD 82E	1.00	.30	1.00	.74	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Students generally agreed that their time in class was well-spent.

Table C-7 displays the data for question 7: "I will be able to do my job better as a result of this course."

TABLE C-7
WILL DO JOB BETTER

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	59	91	87	76	83	80
Disagree	41	9	13	24	17	20

(CS = 15.30 SL = .00)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.00	---			
ASD 82C	.01	.78	---		
ASD 83A	.20	.15	.32	---	
ESD 82E	.09	.59	.94	.76	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Eighty percent of the students agreed with this statement with ASD 82B being the most positive.

Table C-8 displays the data for question 8: "Required reading exercises, and other outside class activities were excessive."

TABLE C-8

EXCESSIVE HOMEWORK

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	57	46	52	47	42	49
Disagree	43	54	48	53	58	51

(CS = 1.72 SL = .79)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.49	---			
ASD 82C	.81	.75	---		
ASD 83A	.56	1.00	.83	---	
ESD 82E	.37	.90	.56	.89	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

A slight majority of students disagreed with this statement.

Table C-9 displays the data for question 9: "Throughout the course, there was adequate transition between the various blocks of instruction in terms of tying in and relating materials to course objectives."

TABLE C-9
ADEQUATE TRANSITION BETWEEN BLOCKS

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	32	61	59	51	32	50
Disagree	68	39	41	49	68	50

(CS = 11.96 SL = .02)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.02	---			
ASD 82C	.02	1.00	---		
ASD 83A	.17	.53	.63	---	
ESD 82E	1.00	.04	.04	.22	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

A mixed reaction of the students showed a 50-50 percentage split about whether or not the transitions between blocks were adequate.

Table C-10 shows the data for question 10: "The simulation/case studies/integration problem exercise(s) aided in the total learning experience."

TABLE C-10
SIMULATION AIDED LEARNING

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	73	89	93	85	84	85
Disagree	27	11	7	15	16	15

(CS = 7.27 SL = .12)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.13	---			
ASD 82C	.02	.75	---		
ASD 83A	.36	.88	.43	---	
ESD 82E	.48	.86	.44	1.00	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Eighty-five percent of the students felt the course exercise helped them learn the material.

Table C-11 shows the data for questions 11: "Discussion of the tests helped me learn."

TABLE C-11

TEST DISCUSSION HELPED ME LEARN

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	97	89	94	88	80	91
Disagree	3	11	6	12	20	9

(CS = 6.68 SL = .15)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.29	---			
ASD 82C	.90	.52	---		
ASD 83A	.30	1.00	.52	---	
ESD 82E	.07	.53	.11	.62	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

The response to the question show a positive reaction to reviewing the tests immediately after completion.

Table C-12 gives the data for question 12: "The tests were given at proper intervals."

TABLE C-12

TESTS GIVEN AT PROPER INTERVALS

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	73	84	93	82	68	82
Disagree	27	16	7	18	32	18

(CS = 9.58 SL = .05)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.34	---			
ASD 82C	.02	.32	---		
ASD 83A	.51	1.00	.26	---	
ESD 82E	.89	.21	.01	.33	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

A majority of students from each offering agreed with this question.

Table C-13 displays the data for question 13: "There was ample opportunity to interact with the facilitator during class."

TABLE C-13
OPPORTUNITY INTERACT WITH FACILITATOR

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	59	54	65	53	28	55
Disagree	41	46	35	47	72	45

(CS = 9.80 SL = .04)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.83	---			
ASD 82C	.77	.41	---		
ASD 83A	.75	1.00	.38	---	
ESD 82E	.03	.06	.01	.10	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Fifty-five percent of the students agreed with this statement. Only the ESD 82E class disagreed.

Table C-14 displays the data for question 14: "I liked the hours the course was offered."

TABLE C-14

I LIKED HOURS COURSE OFFERED

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	62	89	91	85	84	83
Disagree	38	11	9	15	16	17

(CS = 14.81 SL = .01)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.01	---			
ASD 82C	.00	1.00	---		
ASD 83A	.05	.92	.66	---	
ESD 82E	.12	.86	.62	1.00	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Eighty-three percent of the students were satisfied with the course hours.

Table C-15 shows the data for question 15: "The time of day when my class met was acceptable."

TABLE C-15

TIME OF DAY FOR CLASS ACCEPTABLE

RESPONSE	OFFERING					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	59	86	96	91	96	86
Disagree	41	14	4	9	4	14

(CS = 29.38 SL = .00)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.01	---			
ASD 82C	.00	.16	---		
ASD 83A	.01	.76	.59	---	
ESD 82E	.00	.39	1.00	.84	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Students in ASD 82A were the most negative toward the time of day for classes, however, 86% of all students agreed the hours were acceptable.

Table C-16 displays the data for question 16: "Class duration (hours per day) should be increased.

TABLE C-16
HOURS PER DAY FOR CLASS SHOULD BE INCREASED

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	5	9	7	9	0	7
Disagree	95	91	93	91	100	93

(CS = 2.58 SL = .63)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.84	---			
ASD 82C	1.00	1.00	---		
ASD 83A	.92	1.00	1.00	---	
ESD 82E	.65	.31	.40	.36	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Ninety-three percent of the students disagreed with this statement.

Table C-17 displays the data for question 17: "The weekly number of class sessions should be decreased."

TABLE C-17

WEEKLY NUMBER OF CLASSES SHOULD BE DECREASED

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	38	32	30	26	47	33
Disagree	62	68	70	74	53	67

(CS = 3.85 SL = .43)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.74	---			
ASD 82C	.55	.99	---		
ASD 83A	.44	.79	.94	---	
ESD 82E	.59	.28	.18	.15	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Sixty-seven percent of the students felt the number of sessions should not be decreased.

Table C-18 displays the data for question 18: "The room was conducive to learning. (Consider size, location, noise control, seating, work space, etc.)"

TABLE C-18

ROOM CONDUCIVE TO LEARNING

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	86	91	39	73	67	69
Disagree	14	9	61	27	33	31

(CS = 38.72 SL = .00)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.78	---			
ASD 82C	.00	.00	---		
ASD 83A	.28	.08	.00	---	
ESD 82E	.13	.03	.04	.79	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

ASD 82C students did not like the classroom, but the overall percentage was 69% in favor of the classroom used.

Table C-19 displays the data for question 19: "My attendance was voluntary to gain information, voluntary for being career mandatory, involuntary to fill allocated quota, or involuntary for being career mandatory."

TABLE C-19

COURSE ATTENDANCE WAS VOL/INVOL

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Vol Info	43	34	33	19	52	35
Vol Career	32	50	50	47	24	43
Invol Quota	11	5	4	3	8	6
Invol Career	14	11	13	31	16	16

(CS = 17.90 SL = .12)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.38	---			
ASD 82C	.28	.99	---		
ASD 83A	.05	.14	.17	---	
ESD 82E	.85	.21	.17	.03	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Seventy-eight percent of the students were volunteers for the course with 43% of them in the course for career reasons.

Table C-20 shows the data for question 20: "My supervisor expected me to maintain my normal workload while I was a student."

TABLE C-20

SUPERVISOR EXPECTS NORMAL WORKLOAD

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	32	18	26	18	24	24
Disagree	68	82	74	82	76	76

(CS = 3.14 SL = .54)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.22	---			
ASD 82C	.66	.50	---		
ASD 83A	.25	1.00	.52	---	
ESD 82E	.67	.79	1.00	.79	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

About three-fourths of the students disagreed with this statement.

Table C-21 shows the data for question 21: "The course was well suited to the delivery system."

TABLE C-21

COURSE SUITED TO DELIVERY SYSTEM

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	39	66	44	44	24	46
Disagree	61	34	56	56	76	54

(CS = 10.44 SL = .03)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.03	---			
ASD 82C	.76	.06	---		
ASD 83A	.84	.09	1.00	---	
ESD 82E	.35	.00	.14	.19	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Students from the ASD 82B offering were the only ones to agree with this statement. The other four offerings and the total percentage indicated that the students believed the course was not suited to the TVIDS.

Table C-22 shows the data for question 22: "The interaction between the facilitator and the course director appeared to be good."

TABLE C-22

INTERACTION GOOD BETWEEN FACILITATOR & COURSE DIRECTOR

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	72	79	79	64	48	71
Disagree	28	21	21	36	52	29

(CS = 10.44 SL = .03)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.66	---			
ASD 82C	.61	1.00	---		
ASD 83A	.61	.22	.18	---	
ESD 82E	.10	.02	.01	.36	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Seventy-one percent of the students felt that the facilitator and course director had good interaction. Only the ESD 82E class disagreed with the statement.

Table C-23 displays the data for question 23: "The videotape delivery system is an acceptable learning medium."

TABLE C-23

VIDEOTAPE DELIVERY SYSTEM IS ACCEPTABLE LEARNING MEDIUM

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	43	70	41	44	36	48
Disagree	57	30	59	56	64	52

(CS = 12.01 SL = .02)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.02	---			
ASD 82C	.98	.01	---		
ASD 83A	1.00	.03	.93	---	
ESD 82E	.76	.01	.88	.72	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Only the students in ASD 82B felt the video delivery system was acceptable. The total percentages, however, show that the students felt the system was not acceptable.

Table C-24 displays the data for question 24: "The TV monitor(s) were large enough."

TABLE C-24

TV MONITORS WERE LARGE ENOUGH

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	89	91	81	88	48	82
Disagree	11	9	19	12	52	18

(CS = 23.88 SL = .00)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	1.00	---			
ASD 82C	.48	.30	---		
ASD 83A	1.00	.96	.63	---	
ESD 82E	.00	.00	.01	.00	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Eighty-two percent of the students had no problems with the size of the TV monitor.

Table C-25 shows the data for question 25: "I would take another course which used this delivery system."

TABLE C-25

I'D TAKE ANOTHER VIDEOTAPED COURSE

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	46	86	54	44	36	56
Disagree	54	14	46	56	64	44

(CS = 24.07 SL = .00)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.00	---			
ASD 82C	.61	.00	---		
ASD 83A	1.00	.00	.50	---	
ESD 82E	.61	.00	.22	.75	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Three of the five groups disagreed with this statement, yet, the overall percentage indicated 56% of the students would take another course using this system.

Table C-26 displays the data for question 26: "The audio was acceptable."

TABLE C-26
AUDIO ACCEPTABLE

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	86	89	87	91	92	89
Disagree	14	11	13	9	8	11

(CS = .75 SL = .94)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	1.00	---			
ASD 82C	1.00	1.00	---		
ASD 83A	.84	1.00	.84	---	
ESD 82E	.80	.98	.79	1.00	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Eighty-nine percent of the students agreed.

Table C-27 displays the data for question 27: "The absence of the instructor created a learning barrier/problem."

TABLE C-27

ABSENCE OF INSTRUCTOR CREATING LEARNING PROBLEM

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	54	45	52	50	68	53
Disagree	46	55	48	50	32	47

(CS = 3.40 SL = .49)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.58	---			
ASD 82C	1.00	.67	---		
ASD 83A	.92	.87	1.00	---	
ESD 82E	.40	.12	.30	.27	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

A majority of the students believed that the absence of the physical presence of an instructor created a learning problem.

Table C-28 shows the data for question 28: "The facilitator played an important part in helping me learn."

TABLE C-28

FACILITATOR WAS IMPORTANT TO LEARNING

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	73	69	65	39	64	63
Disagree	27	31	35	61	36	37

(CS = 10.17 SL = .04)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.89	---			
ASD 82C	.55	.83	---		
ASD 83A	.01	.02	.04	---	
ESD 82E	.64	.88	1.00	.11	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Sixty-three percent agreed that the facilitator was important to learning.

Table C-29 shows the data for question 29: "Content experts were unnecessary."

TABLE C-29

CONTENT EXPERTS WERE UNNECESSARY

RESPONSE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	34	33	35	32	48	36
Disagree	66	67	65	68	52	64

(CS = 1.94 SL = .75)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	1.00	---			
ASD 82C	1.00	1.00	---		
ASD 83A	1.00	1.00	.97	---	
ESD 82E	.42	.35	.40	.36	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Approximately two-thirds of the students felt that someone who is familiar with the course subject matter should be in the classroom.

Table C-30 displays the data for question 30: "Discussion periods were effectively conducted."

TABLE C-30

DISCUSSION PERIODS WELL CONDUCTED

RESPONSIVE	OFFERINGS					TOTALS
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E	
Agree	76	61	74	52	64	66
Disagree	24	39	26	48	36	34

(CS = 6.40 SL = .17)

SIGNIFICANCE LEVELS: p =

Offering					
ASD 82A	---				
ASD 82B	.23	---			
ASD 82C	1.00	.25	---		
ASD 83A	.07	.60	.07	---	
ESD 82E	.48	.98	.55	.51	---
	ASD 82A	ASD 82B	ASD 82C	ASD 83A	ESD 82E

Two-thirds of the students felt that the discussion periods were effective.

End-of-course questions 31-40 are summarized in the following paragraphs. Question 31 asked, "What was the most outstanding feature of this course?" Students felt the structure of the course, the large amount of information given, and the handouts for future reference were definite advantages of the course.

Question 32 asked, "What was the most disturbing feature of the class?" Students perceived a need to have face-to-face interaction with the instructors. Some students thought there was too much information presented for the two-week course.

Question 33 asked, "Should there be any major change in the sequence of topics?" Students felt the Program Control information should be taught sooner, similar subjects such as PMRT and Turnover should be grouped together.

Question 34 asked, "Are there topics that should be compressed or eliminated." Most comments centered around compressing international logistics support. For question 35, "Are there topics that should be expanded or added," the students had very few comments, other than adding (or expanding) system safety, request for proposal and statement of work coverage. With very few comments for this question, it appeared that students felt that there was more than enough material covered in the two weeks.

"What would make the course more effective?" was question 36. Students wanted "live" instructors, and a review or summary of blocks of material or daily summaries.

Question 37 asked, "What do you consider the advantages of the delivery system?" Most of the comments concerned the low cost of the videotape presentation, classes started on time, did not require tying up instructors, and avoided unnecessary interruptions of the presenter due to student questions.

Question 38 asked, "What do you consider the disadvantages of the delivery system?" The students felt the system's one-way communication did not allow for student-instructor interaction.

The next question presupposes that students want face-to-face instruction and asks, "Other than face-to-face instruction, what would make the system more effective?" Students wanted handouts which were closely tied to lectures, shorter lectures, more class discussion, and improvement in the quality of the presenters and videotapes.

The final question asked for any other comments which would improve the course. The comments were very few and mostly covered by preceding questions. Several students stated the course was enjoyable.

The end-of-course critique comments generally showed that the students were satisfied with the course, maybe too much material was presented in the two week time period, face-to-face instruction was needed, and more summaries of material were desired.

3.3. Test Performance

Test scores. Three variables were considered: pretest scores, post-test scores, and achievement. The difference between pretest and post-test scores was defined as achievement. For each comparison group, mean test scores were calculated and a one-way analysis of variance was used to test for any significant differences.

Table T-1 displays the mean test scores and probability statistics. For the pretest, ten of the eleven comparison groups showed no statistical differences. The probability scores for the post-test show significant differences in four comparison groups, with ASD 82C students having the highest mean test score. The statistical differences in achievement show ASD 82A students with the greatest achievement.

TABLE T-1

MEAN TEST SCORES AND PROBABILITY STATISTICS

LOCATION	PRETEST	POST-TEST	ACHIEVEMENT*
All ASD	53	73	20
ESD	54	72	19
	p = .89	p = .65	p = .42
ASD 82A	52	75	24
ASD 82B	55	72	18
	p = .16	p = .19	p = .00
ASD 82A	52	75	24
ASD 82C	55	77	22
	p = .11	p = .25	p = .45
ASD 82A	52	75	24
ASD 83A	51	70	19
	p = .76	p = .01	p = .01
ASD 82A	52	75	24
ESD 82E	54	72	19
	p = .47	p = .29	p = .05
ASD 82B	55	72	18
ASD 82C	55	77	22
	p = .65	p = .01	p = .02
ASD 82B	55	72	18
ASD 83A	51	70	19
	p = .06	p = .15	p = .44
ASD 82B	55	72	18
ESD 82E	54	72	19
	p = .68	p = .98	p = .59
ASD 82C	55	77	22
ASD 83A	51	70	19
	p = .04	p = .00	p = .08
ASD 82C	55	77	22
ESD 82E	54	72	19
	p = .51	p = .04	p = .17
ASD 83A	51	70	19
ESD 82E	54	72	19
	p = .31	p = .26	p = .94

*Mean achievement may differ slightly from mean post-test minus mean pretest score because of missing test scores and rounding from decimal places.

Regression. Stepwise multiple regression models were constructed to analyze certain variables and locations in terms of potential predictors of pretest scores, post-test scores, achievement and acceptance. (Acceptance is covered in the next section.) The variables are:

a. Post-test
b. Pretest
c. Achievement
d. Acceptance
e. Grade
f. Education Level
g. Sex
h. Age
i. Years of job-related experience
j. Methodology
k. All site locations (course offerings)

Separate regression models were constructed for pretest, post-test and achievement. Table T-2 displays the data for the variables stated above.

TABLE T-2

REGRESSION ANALYSIS: ALL SITE LOCATIONS (COURSE OFFERINGS)

PREDICTOR VARIABLES	UNNORMALIZED COEFFICIENT	BETA WEIGHT	SIGNIFICANCE LEVEL
	CRITERION VARIABLE: PRETEST SCORES		
*Sex	7.37	.29	.00
*Years Experience	1.96	.17	.03
Education Level	2.10	.16	.05
(Constant) 43.17	R^2 = .17		
*Not used for statistical comparisons (See Table D-6)			
	CRITERION VARIABLE: POST-TEST SCORES		
Pretest	.37	.40	.00
Education Level	2.72	.23	.00
Grade	1.82	.18	.01
ASD 82C	3.12	.16	.02
(Constant) 46.11	R^2 = .40		
	CRITERION VARIABLE: ACHIEVEMENT		
Pretest	-.62	-.66	.00
Education Level	2.72	.22	.00
Grade	1.82	.18	.01
ASD 82C	3.12	.15	.02
(Constant) 46.11	R^2 = .43		

The best prediction equation for pretest scores included the variables of sex, years of job-related experience and education level, but sex and years of experience are statistically invalid. (See discussion following Table D-6.) The best predictors for post-test scores and achievement are pretest score, education level, grade and course offering of ASD 82C. In other words, students in course offering ASD 82C, had higher pretest scores, were more formally educated and had slightly more job-related experience.

3.4 TVIDS Acceptability. End-of-course questions 23 (Table C-23) and 25 (Table C-25) were combined and analyzed by one-way analysis of variance and regression analysis. The range of scores is 6 low acceptance to 0 high acceptance. Mean or neutral is 3.0. Table A-1 shows the acceptability score for each course offering.

TABLE A-1
MEAN TVIDS ACCEPTABILITY

LOCATION	MEAN SCORES	
1. ASD 82A	3.70	
2. ASD 82B	2.50	
3. ASD 82C	3.59	
4. ASD 83A	3.59	
5. ESD 82E	3.92	
AVERAGE	3.41	p = .00 n = 192

Scores lower than 3.0 were interpreted as accepting of the TVIDS. The scores showed that only ASD 82B accepted the TVIDS. The average score indicates that students do not accept the TVIDS.

A regression analysis of the acceptance scores shows that offering ASD 82B, and age are the best predictors of TVIDS acceptance. Table A-2 shows this data.

TABLE A-2
REGRESSION ANALYSIS: ACCEPTANCE

PREDICTOR VARIABLE	UNNORMALIZED COEFFICIENT		BETA WEIGHT	SIGNIFICANCE LEVEL
ASD 82B	-1.25		-.36	.00
AGE	-.33		-.19	.013
(Constant)	4.08	$R^2 = .17$		

3.5 Correlation Matrix. A final analysis of data shows a relationship between certain variables. The correlation statistic has a value of -1.0 to + 1.0 or a negative correlation to a positive correlation.

TABLE M-1
CORRELATIONS

VARIABLE	STATISTIC								
ACH	.44	---							
PRE	.51	-.54	---						
ACC	-.05	.01	-.06	---					
RANK	.35	.11	.23	-.15	---				
ED	.38	.11	.24	-.00	.19	---			
SEX	.35	-.01	.34	.09	.24	.32	---		
AGE	.09	.09	-.00	-.20	.63	-.06	.01	---	
EXP	.13	-.05	.16	-.16	.34	-.08	.02	.28	---
TVIDS	-.09	-.04	-.04	.14	-.10	-.00	-.06	.04	-.15
	POST	ACH	PRE	ACC	RANK	ED	SEX	AGE	EXP

The statistical data show the highest positive correlation (.63) between the age and rank of the student which means the older a person was, the higher that person's military rank or civilian grade.

The highest negative correlation was between pretest scores and achievement (-.54) which logically indicates that a high pretest score allows a person only so many points to achieve toward 100% of the post-test. Other data show that the higher a person's rank or grade, the less accepting that person of the TVIDS. There is no relationship between age and pretest, educational level and acceptance of TVIDS, educational level and TVIDS, or achievement and acceptance.

4. FINDINGS

The first research question addressed the comparability of each class (offering) in terms of demographic data. (Demographic data for ASD 82A were not available for this report.) The four offerings were statistically comparable for grade, however, the students in offering ASD 82C had 38% field grade officers or civilian equivalents as opposed to about 19% for the other offerings. For educational level, the following were statistically different: ASD 82C and ASD 82B, ASD 82B and ESD 82E, ASD 83A and ESD 82E. ESD had more master degree holders than the students in the other course offerings. The male-female ratio was greater than 2:1 for each offering. The age of the students in each comparison group was statistically comparable. The percentage of age grouping across offerings was about equal.

The second research question looked at the comparability of student groups for entry level knowledge as revealed on pretest scores. Only one comparison group was statistically different ($p = .04$) and that was ASD 82C ($\bar{x} = 55$) vs ASD 83A ($\bar{x} = 51$).

The third research question addressed the differences in academic achievement between offerings. Four comparison groups showed statistical differences in mean achievement scores. They were ASD 82A vs ASD 82B ($p = .00$), ASD 82A vs ASD 83A ($p = .01$), ASD 82A vs ESD 82E ($p = .05$), and ASD 82B vs ASD 82C ($p = .02$). ASD 82C had one of the highest mean pretest scores (55) and the highest mean post-test score (77).

The fourth research question looked at student acceptance (combination of end-of-course questions 23 and 25) of the Tutored Videotape Instructional Delivery System. Overall, students did not accept the delivery system.

5. SUMMARY AND CONCLUSIONS

Due to the population variances of sex and years of experience conclusions based on either factor are not valid. Available data and analysis permit these conclusions to be made.

a. Students do not accept the TVIDS mode of instruction.

b. Student entry educational level affected pre- and post-test performance and subsequently achievement. That is, the greater the educational entry level, the greater the achievement.

c. The older a person, the less accepting of the Tutored Videotaped Instruction Delivery System.

d. The higher the person's military rank (or civilian equivalent), the less accepting of the Tutored Videotaped Instruction Delivery System.

e. A person's education level showed little correlation to that person's acceptance of the Tutored Videotaped Instruction Delivery System.

6. RECOMMENDATIONS

a. Specific feedback should be obtained to learn why students feel the SYS 100 course was not suited to tutored videotape delivery. Responses could also be used to indicate why tutored videotape is not considered an acceptable learning medium.

b. Investigate alternative ways to satisfy student desires for more interaction.

c. Cost data should be developed to provide actual costs for Tutored Videotaped Instructional Delivery System. These data could then be compared with resident and other non-resident instructional delivery systems.

APPENDIX A

DEMOGRAPHIC INFORMATION

GENERAL INSTRUCTIONS FOR COMPLETING THE SURVEY

Use the attached answer sheet to mark your responses. Use only a No. 2 pencil when filling out the answer sheet. DO NOT USE INK. Enter your 5 digit student number in the last five positions in the STUDENT NUMBER area. Please do NOT write your name or social security number anywhere on the answer sheet. Mark the answer sheet carefully to negate computer error. Fill in the box with a heavy mark, do not go outside the lines of the box. If you made a mistake, erase the mark completely before entering a new one.

1. My present STATUS is:

   A. Officer
   B. Enlisted
   C. Civilian
   D. Contractor
   E. Other (foreign, etc.)

2. My present RANK or GRADE is: (If you answered D or E above, please leave blank.)

	Officer	Enlisted	Civilian
A.	01 or 02	E4	GS 5-10
B.	03	E5	GS 11
C.	04	E6	GS 12
D.	05	E7	GS 13
E.	06	E8-9	GS 14

3. My EDUCATIONAL background: (Mark highest completed)

   A. High School
   B. Associate Degree
   C. Baccalaureate Degree
   D. Masters Degree
   E. Ph.D.

4. My SEX is:

   A. Female
   B. Male

5. My present AGE is:

   A. 20-25
   B. 26-35
   C. 36-45
   D. 46-55
   E. 56 or over

6. Years of EXPERIENCE in a job related to the course:

   A. 0-1
   B. 2-3
   C. 4-5
   D. 6-7
   E. 8 or more

APPENDIX B

V

End-of-Course Critique Questionnaire

This critique is designed to obtain feedback concerning the course you just completed. Your contribution to the improvement of this course will benefit future students.

Please answer each question to the best of your ability. Your answer sheet will be machine processed except for the questions in Part II. Additional written comments are welcomed.

Instructions

Use the answer sheet to mark your responses. Use only a No. 2 pencil when filling out the answer sheet. DO NOT USE INK. Enter your student number in the last positions of the STUDENT NUMBER area. Please do NOT write your name or social security number anywhere on the answer sheet. Select only one answer to each question. Mark the answer sheet carefully to negate computer error. Fill in the box with a heavy mark; do not go outside the lines of the box. If you make a mistake, erase the mark completely before entering a new one. Part II questions require short written responses. Use the back of the answer sheet for these.

PART I

Respond by using the options A thru D for each statement.

A. Strongly agree
B. Agree
C. Disagree
D. Strongly disagree

(These options will be repeated at the top of each page for your convenience.)

1. The course objectives were made clear either orally or in the instructional aids.

2. The course appeared well-structured.

3. The course structure permitted questions to be asked and answered satisfactorily.

4. There were adequate handout materials. (If none, darken E.)

5. The course was the right length.

6. My time could have been better utilized elsewhere.

7. I will be able to do my job better as a result of this course.

8. Required reading, exercises, and other outside class activities were excessive. (Darken E if none.)

6-82
EDV

OVER

A. Strongly agree
B. Agree
C. Disagree
D. Strongly disagree

9. Throughout the course, there was adequate transition between the various blocks of instruction in terms of tying in and relating materials to course objectives.

10. The simulation/case studies/integrating problem exercise(s) aided in the total learning experience. (Darken E if not applicable.)

11. Discussion of the tests helped me learn. (Darken E if no discussion of the tests.)

12. The tests were given at proper intervals. (Darken E if no tests were given.)

13. There was ample opportunity to interact with the facilitator during class.

14. I liked the hours the course was offered.

15. The time of day when my class met was acceptable.

16. Class duration (hours per day) should be increased.

17. The weekly number of class sessions should be decreased.

18. The room was conducive to learning. (Consider size, location, noise control, seating, work space, etc.)

19. My attendance was:

a. Voluntary (to gain information)

b. Voluntary (course was career mandatory)

c. Involuntary (to fill allocated quota)

d. Involuntary (course was career mandatory)

20. My supervisor expected me to maintain my normal work load while I was a student.

21. The course was well suited to the delivery system.

22. The interaction between the facilitator and the course director appeared to be good.

23. The videotape delivery system is an acceptable learning medium.

A. Strongly agree
B. Agree
C. Disagree
D. Strongly disagree

24. The TV monitor(s) were large enough.

25. I would take another course which used this delivery system.

26. The audio was acceptable.

27. The absence of the instructor created a learning barrier/problem.

28. The facilitator played an important part in helping me learn.

29. Content experts were unnecessary.

30. Discussion periods were effectively conducted.

PART II

Please answer the questions on the back of your answer sheet.

V

31. What was the most outstanding feature of this course?

32. What was the most disturbing feature of this course?

33. Should there be any major change in the sequence of topics?

34. Are there topics that should be compressed or eliminated?

35. Are there topics that should be expanded or added?

36. What would make the course more effective?

37. What do you consider the advantages of this delivery system?

38. What do you consider the disadvantages of this delivery system?

39. Other than face-to-face instruction, what would make the system more effective?

40. Please provide any other comments, suggestions, or criticisms which will improve the course.

Return questionnaire and answer sheet to the class leader or his/her designate.

APPENDIX C

DATA BASE

CURRENT DATA BASE

0137	1231211034023222210233312103333	449	539	519	649	0	0
0127	1112130112021323110221111112011	609	839	759	949	0	0
0121	0231120224003233320031 011121 2	509	679	639	869	0	0
0120	000013012401011320011110112021	479	559	559	879	0	0
0139	012112111430111221101121211214	479	759	759	759	0	0
0128	111222121411111231121431111021	719	959	679	0	0	0
0107	332330323201123302313231311211	0	0	0	0	0	0
0163	122331221403022301112111212121	0	0	0	0	0	0
0162	121331212411122310222330311220	0	0	0	0	0	0
0161	112123421401241402230201010100	0	0	0	0	0	0
0160	212322122301330311312121212011	0	0	0	0	0	0
0166	113122112101111220021111112121	0	0	0	0	0	0
0165	333333303333333333031331333333	0	0	0	0	0	0
0164	222122211222112122210220212121 13	0	0	0	0	0	0
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0143	123322022401211321122421111121	549	839	919	969	0	0
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0133	011122122400011220311111112020	449	679	479	779	0	0
0131	111222211411111211321121114021	429	519	0	699	0	0
0125	022211222202203221002111110221	579	759	539	829	0	0
0124	221321112111111321021111112111	639	759	639	839	0	0
0123	222221212412222222222 111122121	459	639	639	779	0	0
0118	231112122240100033112311111 2031	49	679	799	859	0	0
0116	333313323313333121023233320223	459	599	599	859	0	0
0115	133131211313121121102323131 0221	619	679	719	869	0	0
0114	121222122400011132112213111 2121	469	739	539	989	0	0
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0109	222330312212211221023231321122	419	599	679	789	0	0
0108	222112122411111221022131211121	0	559	719	750	0	0
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0134		519	799	599	909	0	0
0130		509	559	639	339	0	0
0136		519	719	639	849	0	0
0107		769	0	799	0	0	0
0122		619	839	339	909	0	0
0126		429	0	599	759	0	0
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0105		459	379	679	869	0	0
0132		629	719	679	849	0	0
0119		519	679	639	749	0	0
0117		459	679	759	899	0	0
0101		519	879	379	839	0	0
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0206013011	012213121411131132002111111121	349	719	799	849	0	0
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0224221120	2213221024211112220221211111211	429	719	679	659	0	0
0223210110		500	719	519	759	0	0
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0238012110	0131120121112112211321211111032	559	839	919	889	0	0
0237222112	1111211114111111311222111112212	609	719	879	859	0	0
0236203010	1122221012021112100111001122221	519	559	559	729	0	0
0235002000	1232111214021122211111111112222	529	839	679	859	0	0
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0232012121	1111211121111222210221121222121	609	679	799	769	0	0
0231002100	1111321014000013212121111112222	639	639	599	769	0	0
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0250232124	1120121214111111221031 11111 11	579	759	679	879	0	0
0249002110		459	679	479	599	0	0
0248212133	1023130214111112211211111112111	559	759	599	899	0	0
0247002111	1110231114122333311211111112122	699	839	799	939	0	0
0246002111	0122221214011113111211111112211	719	759	919	459	0	0
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0252002100	1132231201113002210211121122211	479	519	519	669	0	0
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0314023120	11111112241111122112111111121	549	779	579	769	0	0
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0340222111	0131121224214213211214111111232	769	759	0	849	0	0
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0326212101	3122121224001112233221112111121	479	799	479	979	0	0
0352223120	0020111114011003110211111111111	529	759	519	969	0	0
0304013010	1121121124132012210121212111121	449	749	719	879	0	0
0311002110	1220331234112113221031313101 11	549	579	819	559	0	0
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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0347002100	113130111401311311212111210121	529	719	579	839	0	0
0302110100	122121211141120032203212111122	529	379	759	839	0	0
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0322200010	012012011401111222002100002011	519	719	0	359	0	0
0321013110	111112141411111122112113111212 1	549	379	759	859	0	0
0327003110		559	799	559	829	0	0
0346013110	112112121411111223112131211222	779	919	0	909	0	0
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0333013110	111121121411111222123131311221	669	339	719	899	0	0
0342023120	111112021401100332122111111111	629	339	759	859	0	0
0345013110	101112121411111323121111112111	619	719	799	859	0	0
0313222112	001012122421311222021411112022	539	799	679	889	0	0
0338223110	131233002401000332032021112011	459	719	799	699	0	0
0343222130	110112020141000331122111212030	559	719	579	779	0	0
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0351	211132121411211321121121112111	469	479	359	599	0	0
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0410	112112111111100332123131321131	429	549	539	619	0	0
0421	113212122 122112222212111111322	509	839	719	899	0	0
0415	110002032402000021101111311121	509	799	639	909	0	0
0445	011012121101111221321112111121	169	719	639	909	0	0
0426	111122111211111221321111112111	419	759	799	829	0	0
0430	122111121141121122112213121122 1	739	959	799	939	0	0
0404	113312001400211322133121210101	449	339	839	959	0	0
0447	112232111401221021101121211121	449	839	719	329	0	0
0455	113112122101211321022121211121	769	799	799	969	0	0
0424	111113021111111122101111112121	359	479	519	559	0	0
0457	012303100402100333232010101320	209	839	339	879	0	0
0438	111122101411111122132111111211 1	349	519	399	689	0	0
0433	112122112411211221121211111 2 2	399	799	799	939	0	0
0435	112212122131311333122211112233	559	919	759	899	0	0
0449	001111212110010033113221121122 1	369	799	839	819	0	0
0453	012111212141111122212242111112 1	579	799	599	789	0	0
0411	111412 214011112143211111 122 1	529	679	559	739	0	0
0428	111121201421120300122120211211	439	439	639	729	0	0
0448	111212021401111321021111112111	589	959	1000	959	0	0
0429	012313012401311331113131111132 1	359	799	599	829	0	0
0422	111012112401011321031111212221	469	559	799	859	0	0
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0491	112212221 111112210211212121 21	469	559	519	379	0	0
0436	111312122141121122112121111222 1	199	839	379	869	0	0
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0440	[illegible]	549	719	799	359	0	0

0434	22212212341211132322111111112212	54[illegible]	879	639	750	0	0
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0442	113112122411111222113231310233	579	539	579	959	0	0
0405	01222 1124122112232222 22221222	609	919	759	919	0	0
0408	113303014001003233311000002111	459	749	759	599	0	0
0419	013012113400111331032210231221	559	739	839	959	0	0
0409	112132101401231321032 11112111	419	799	759	859	0	0
0456	113122113413131313123122310222	599	799	459	889	0	0
0401		639	799	759	899	0	0
0454		199	559	719	729	0	0
0443		459	639	799	929	0	0
0432		569	879	799	879	0	0
0456		209	399	439	649	0	0
0450		469	679	519	819	0	0
0416		509	799	719	759	0	0
0431		559	1000	759	959	0	0
0452		539	539	679	819	0	0
0415		719	579	879	939	0	0
0430		529	799	759	839	0	0
0414		489	719	539	739	0	0
0403		489	719	759	919	0	0
0439		569	759	559	769	0	0
0425		629	879	799	929	0	0
0444		500	719	599	839	0	0
0423		399	399	539	589	0	0
0407		699	919	839	929	0	0
0437		500	759	579	819	0	0
0440		0	719	639	509	0	0
0730002100		619	839	839	779	0	0
0735002100	112312112411311321133231211221	569	559	599	739	0	0
0742002000	011012221411111221121111112222	529	599	519	769	0	0
0720002100	112022014411111223121222212211	479	559	399	789	0	0
0724212101	231131102411211211322131212222	359	719	599	809	0	0
0746202000	122121122412111221122121211221	419	559	559	809	0	0
0711223010	212112122411211221 21111111212	479	599	599	579	0	0
0743013110	112132122442211321122321211323	549	759	419	849	0	0
0736002100	11112111244112123113 31312 22	589	679	799	879	0	0
0747002100	111013011401111221131111112121	629	839	799	869	0	0
0739222110		459	0	0	0	0	0
0704202100		509	599	519	829	0	0
0705002100	122132102412111221122121211122	549	799	599	839	0	0
0752002101		519	599	799	839	0	0
0721002100	123420221422333303303333320223	539	539	559	709	0	0
0735213130	114222121412211221011221211222	459	679	679	609	0	0
0732222130		439	479	679	569	0	0
0733012110	110001121411300311012211112111	589	839	759	849	0	0
074500211	011003131110113222131111112131	500	679	759	849	0	0
075621003	112012021401111333121111112121	439	639	759	739	0	0
0706002100	231022122411111313332111112211	539	679	559	949	0	0
0719202100	11011212113001132002111	399	479	359	609	0	0
07490 3112	111112111221311221022321211221	500	719	759	709	0	0
074114012		479	599	559	0	0	0
0718222121	123132102421121230133130310222	639	879	719	929	0	0
0740002100		579	479	539	649	0	0
0753212110		789	839	959	909	0	0
0729202100		500	599	799	819	0	0
0726002100	122131222411211211122231210211	469	439	479	739	0	0
0751002100		539	679	839	779	0	0
0709002000	002121122411111221123131211222	439	879	579	829	0	0
0746212111		429	439	719	609	0	0
0727013110	113103021411221122112321 11323	539	879	759	879	0	0
0702202110		339	349	559	599	0	0
0713012110	2211401222112121122213131222 1	469	599	579	750	0	0
0726120120	033110331341300322031111313334	559	599	799	789	0	0
0737302110	232220111411121311132313130121	509	559	759	389	0	0
[illegible]	[illegible]	459	579	539	549	0	0

0734110110		15[illegible]	519	679	539	0	0
0716212020		419	599	679	679	0	0
0723002100	30302211111111012213211111222211	509	519	639	739	0	0
0731002100	32333221330231123232221121210l	519	479	719	729	0	0
0707200030	11101220 110113313411111	339	559	839	579	0	0
0750023120	001132121411111221322112112122	619	339	919	909	0	0
0725002100		549	539	679	839	0	0
0754002100		399	719	479	839	0	0
0716202112	01202221214111112013311111111112	509	539	599	739	0	0
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0744202100		559	599	759	759	0	0
070102312		659	759	799	799	0	0
0757023120	013302112412200321002121101132	629	799	719	659	0	0
0793	2224122122112112420222111112222	0	339	399	519	0	0
0703	211122100001111130 2110012011	439	479	519	739	0	0
0722		669	799	839	839	0	0
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0901002100	333330133421311333333333300322	339	719	439	759	0	0
0902002100	110022022401011322132111002030	629	759	639	839	0	0
0903013110	022003101413200300133411210032	569	579	539	349	0	0
0904201030	122032111411211210321112211122	339	559	319	609	0	0
0905200020	122101212212221313123232311112	449	519	439	500	0	0
0906002100	231133113211221311112121210221	469	599	559	759	0	0
0907023120	112113021411300221031310111021	559	579	739	849	0	0
0908013111	111022022412221221011311112121	599	379	359	919	0	0
0913002000	003033030400300300003333100000	449	479	559	329	0	0
0912013110	232121122401111221022132212121	569	579	759	879	0	0
0911033120		599	639	759	719	0	0
0910002100	22301211140231031313233310102	590	679	759	779	0	0
0915003111	123321122412111321013421211231	599	799	379	339	0	0
0914023120	123212122411311222022222311322	709	379	759	969	0	0
0917013120	01212111242232131033323230223	599	799	379	379	0	0
0916002000	10122311140101132101133212011	659	799	759	839	0	0
0919200120	122212121112111221122121112121	419	599	719	779	0	0
0924003100	11233012240021230102333330212	559	719	539	729	0	0
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0921012110	33333022341121122333233310011	500	679	719	739	0	0
0923002100	12333012341132130033333310341	459	719	799	889	0	0
0927002000	121131 241121131 232121212111	599	719	639	719	0	0
0926002110	333320303321211331223131310322	559	639	599	709	0	0
0925013110	333033303323300302033201111111	399	639	759	699	0	0
0920221120	123212121421211323001111112211	649	719	719	619	0	0
0918200011	123232102401100211032311111011	399	839	599	329	0	0
1217002111	112122011311211321021121310021	449	339	479	759	0	0
1216002100	001012021410100231021111211111	109	339	799	839	0	0
1215012111	113110111411311331013131212213	559	919	779	939	0	0
1214003000	23113020240113130123 031311011	189	439	479	659	0	0
1213013112	113112011412211331032421111111	469	759	799	909	0	0
1212033133	112121221411111221112121112124	579	799	959	969	0	0
1211033120	112112111411111221121111112221	339	839	919	859	0	0
1210002111	110033101211000321132111113121	469	799	299	849	0	0
1209034124	111122121111111130131111112121	439	719	759	719	0	0
1208002100	322230221411231301231411232011	219	839	559	709	0	0
1207002100	213132102411111221021121210221	169	759	759	799	0	0
1206023111	111122221411011311021121112111	699	919	799	919	0	0
1205013110	121112112401221322331121210111	250	379	799	829	0	0
1204013110	013122111411111221033322221111	469	959	919	909	0	0
1203002100	012221111211111211133131111211	449	839	379	389	0	0
1202013112	030021020410010332021111112111	529	959	679	329	0	0
1201002100	002012011400011321331121211111	250	679	839	759	0	0

319 RECORDS CURRENTLY IN DATA BASE

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 *CSB    NOS/BE L564E          L564  CMR3  1/01/83
16.14.43.ALMACOG  FROM CSA/AC
16.14.43.IP  00024375 WORDS - FILE INPUT  , DC 04
16.14.43.ALM,CM170000,T50,I050. T820495,MILAM,AFI
16.14.43.T,E04,55750, NEW FILE 7 CARDS
16.14.47.ATTACH,TEDS,ID=AFIT.
16.14.47.PFN IS
16.14.47.TEDS
16.14.48.AT CY= 002 SN=AFIT
16.14.49.REQUEST,TAPE2,*PF.
16.14.59.TEDS.
16.18.39.    STOP
16.18.39.     132500 MAXIMUM EXECUTION FL.
16.18.39.      5.514 CP SECONDS EXECUTION TIME.
16.18.39.CATALOG,TAPE2,TEDS,RP=999.
16.18.39.NEWCYCLE CATALOG
16.18.39.CT ID=  T820495 PFN=TEDS
16.18.40.CT CY= 002 SN=AFIT    0000002560 WORDS.
16.18.41.OP  00002330 WORDS - FILE OUTPUT , DC 40
16.18.41.MS       7744  WORDS  (     7744 MAX USED)
16.18.41.CPA        9.425 SEC.         4.719 ADJ.
16.18.41.IO         7.916 SEC.         4.480 ADJ.
16.18.41.CM       515.136 KWS.         5.002 ADJ.
16.18.41.CRUS                         14.203
16.18.41.PP        11.591 SEC.     DATE 03/24/83
16.18.41.EJ  END OF JOB, AC  T820495.
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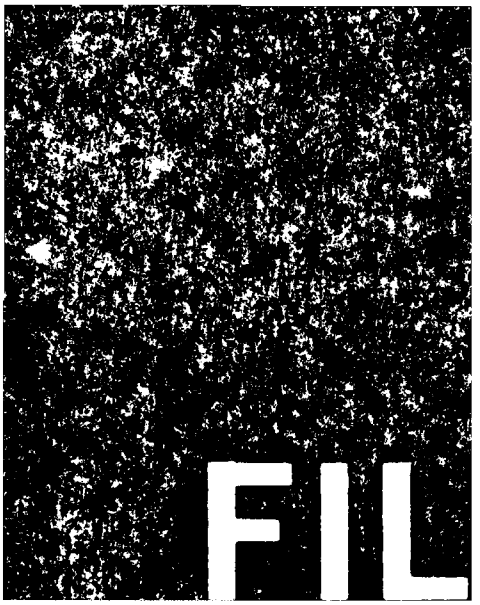
FIL